

Claims

- [c1] A method for providing interoperability of email and instant messaging services, comprising:
- receiving a request by an email recipient to respond to an email message using an instant message application, said email message received from an email sender;
 - retrieving an instant message address for said email sender from storage;
 - associating said instant message address of said email sender with an instant message composed by said email recipient;
 - transmitting said instant message to said instant message address using said instant message application;
 - wherein an email address associated with said email sender is mapped to a corresponding instant message address associated with said email sender.
- [c2] The method of claim 1, further comprising:
- transmitting history data along with said instant message, said history data including communications exchanges previously conducted between said email recipient and said email sender;
 - wherein said communications exchanges include at least

one of:
email messages;
instant messages; and
attachments.

[c3] The method of claim 1, further comprising:
determining whether said email sender is available to receive said instant message;
if available, sending a notification of successful transmission to said email recipient; and
if not available, querying said email recipient to perform at least one of:
storing said instant message and periodically retransmitting said instant message;
aborting said instant message; and
transferring content of said instant message to an email application resulting in an email message and transmitting said email to said email sender.

[c4] The method of claim 3, wherein said content includes:
message text;
recipient addresses;
sender addresses; and
history data.

[c5] The method of claim 2, wherein said history data is stored on both of said email recipient's and said email

sender's storage systems.

- [c6] The method of claim 1, further comprising:
- receiving a request by an instant message recipient to respond to an instant message using an email application;
 - retrieving an email address for an instant message sender from storage;
 - associating said email address of said instant message sender with an email message composed by said instant message recipient; and
 - transmitting said email message to said email address using said email application;
- wherein an instant message address associated with said instant message sender is mapped to a corresponding email address associated with said instant message sender;
- transmitting history data along with said email message, said history data including communications exchanges previously conducted between said instant message recipient and said instant message sender;
- wherein said communications exchanges include at least one of:
- email messages;
 - instant messages; and
 - attachments; and

sending a notification of successful transmission to said instant message recipient.

[c7] The method of claim 1, further comprising deploying process software for providing said interoperability of email and instant messaging services, said deploying comprising:

- installing said process software on at least one server;
- identifying server addresses for users accessing said process software on said at least one server;
- installing a proxy server if needed;
- sending said process software to said at least one server and copying said process software to a file system of said at least one server;
- sending the process software to at least a first client computer; and
- executing said process software on said first client computer.

[c8] The method of claim 7, wherein said installing said process software further comprises:

- determining if programs will reside on said at least one server when said process software is executed;
- identifying said at least one server that will execute said process software; and
- transferring said process software to storage for said at least one server.

- [c9] The method of claim 7, wherein said sending said process software to said first client computer further includes having said at least one server automatically copy said process software to said first client computer, and running an installation program at said first client computer to install said process software on said first client computer.
- [c10] The method of claim 7, wherein said sending said process software to said first client computer further comprises identifying a user and an address of said first client computer.
- [c11] The method of claim 7, wherein said sending said process software to said first client computer includes sending said process software to at least one directory on said first client computer.
- [c12] The method of claim 7, wherein said sending said process software to said first client computer includes sending said process software to said first client computer via e-mail.
- [c13] The method of claim 1, further comprising integrating process software for providing said interoperability of email and instant messaging services, said integrating comprising:

determining if said process software will execute on at least one server;

identifying an address of said at least one server;

checking said at least one server for operating systems, applications, and version numbers for validation with said process software, and identifying any missing software applications for said at least one server that are required for integration;

updating said at least one server with respect to any operating system and application that is not validated for said process software, and providing any of said missing software applications for said at least one server required for said integration;

identifying client addresses and checking client computers for operating systems, applications, and version numbers for validation with said process software, and identifying any software applications missing from said client computers that are required for integration;

updating said client computers with respect to any operating system and application that is not validated for said process software, and providing any missing software application for said client computers required for said integration; and

installing said process software on said client computers and said at least one server.

- [c14] The method of claim 1, further comprising on demand sharing of process software for providing said interoperability of email and instant messaging services, said on demand sharing comprising:
- creating a transaction containing unique customer identification, requested service type, and service parameters;
 - sending said transaction to at least one main server;
 - querying said at least one main server about processing capacity associated with said at least one main server to help ensure availability of adequate resources for processing of said transaction; and
 - allocating additional processing capacity when additional capacity appears needed to process said transaction, said additional processing capacity being selected from the group of additional capacities consisting of central processing unit capacity, processor memory capacity, network bandwidth capacity, and storage capacity.
- [c15] The method of claim 14, further comprising recording a plurality of usage measurements selected from the group of usage measurements consisting of network bandwidth, processor memory, storage, and central processing unit cycles.
- [c16] The method of claim 15, further comprising:
- summing said usage measurements ;

acquiring at least one multiplicative value associated with said usage measurements and with unit costs; and recording any such acquired multiplicative value as an on demand charge to a requesting customer.

[c17] The method of claim 16, further comprising at least one of:

posting said on demand charge on a web site if requested by said requesting customer; and sending said on demand charge via e-mail to said requesting customer's e-mail address.

[c18] The method of claim 16, further comprising charging said on demand charge to said requesting customer's account if an account exists and if said requesting customer has selected a charge account payment method.

[c19] The method of claim 1, further comprising deploying, accessing, and executing process software for providing said interoperability of email and instant messaging services, said deploying, accessing, and executing process software implemented through a virtual private network, the method further comprising:

determining if a virtual private network is required; checking for remote access to said virtual private network when it is required;

if said remote access does not exist, identifying a third

party provider to provide secure, encrypted connections between a private network and remote users;
identifying said remote users; and
setting up a network access server operable for downloading and installing client software on desktop computers for remote access of said virtual private network;
accessing said process software;
transporting said process software to at least one remote user's desktop computer; and
executing said process software on said at least one remote user's desktop computer.

[c20] The method of claim 19, further comprising:
determining if said virtual private network has a site-to-site configuration for providing site-to-site access, and if said virtual private network is not so available, installing equipment required to establish a site-to-site configuration for said virtual private network;
installing large scale encryption into said site-to-site virtual private network; and
accessing said process software through said site-to-site configuration with large scale encryption.

[c21] A storage medium including machine-readable computer program code for providing interoperability of email and instant messaging services, the storage medium including instructions for causing a computer to implement a

method, comprising:

receiving a request by an email recipient to respond to an email message using an instant message application,

said email message received from an email sender;

retrieving an instant message address for said email sender from storage;

associating said instant message address of said email sender with an instant message composed by said email recipient;

transmitting said instant message to said instant message address using said instant message application;

wherein an email address associated with said email sender is mapped to a corresponding instant message address associated with said email sender.

- [c22] The storage medium of claim 21, further comprising instructions for causing said computer to implement:
- transmitting history data along with said instant message, said history data including communications exchanges previously conducted between said email recipient and said email sender;
- wherein said communications exchanges include at least one of:
- email messages;
 - instant messages; and
 - attachments.

[c23] The storage medium of claim 21, further comprising instructions for causing said computer to implement:
determining whether said email sender is available to receive said instant message;
if available, sending a notification of successful transmission to said email recipient; and
if not available, querying said email recipient to perform at least one of:
storing said instant message and periodically retransmitting said instant message;
aborting said instant message; and
transferring content of said instant message to an email application resulting in an email message and transmitting said email to said email sender.

[c24] The storage medium of claim 23, wherein said content includes:
message text;
recipient addresses;
sender addresses; and
history data.

[c25] The storage medium of claim 22, wherein said history data is stored on both of said email recipient's and said email sender's storage systems.

[c26] The storage medium of claim 21, further comprising instructions for causing said computer to implement:

- receiving a request by an instant message recipient to respond to an instant message using an email application;
- retrieving an email address for an instant message sender from storage;
- associating said email address of said instant message sender with an email message composed by said instant message recipient; and
- transmitting said email message to said email address using said email application;

wherein an instant message address associated with said instant message sender is mapped to a corresponding email address associated with said instant message sender;

transmitting history data along with said email message, said history data including communications exchanges previously conducted between said instant message recipient and said instant message sender;

wherein said communications exchanges include at least one of:

- email messages;
- instant messages; and
- attachments; and

sending a notification of successful transmission to said

instant message recipient.

[c27] The storage medium of claim 21, further comprising instructions for causing said computer to deploy process software for providing said interoperability of email and instant messaging services, wherein deployment of process software comprises:

installing said process software on at least one server;

identifying server addresses for users accessing said process software on said at least one server;

installing a proxy server if needed;

sending said process software to said at least one server and copying said process software to a file system associated with said at least one server;

sending said process software to at least a first client system;

executing said process software on said first client system;

determining if programs will reside on said at least one server when said process software is executed;

identifying said at least one server that will execute said process software; and

transferring said process software to storage for said at least one server.

[c28] The storage medium of claim 27, wherein said installing said process software further comprises:

determining if programs will reside on said at least one server when said process software is executed;
identifying said at least one server that will execute said process software; and
transferring said process software to storage for said at least one server.

[c29] The storage medium of claim 27, wherein said sending said process software to said first client system includes having said at least one server automatically copy said process software to said first client system, and running an installation program at said first client system to install said process software on said first client system.

[c30] The storage medium of claim 27, wherein said sending said process software to said first client computer further comprises identifying a user and an address of said first client computer.

[c31] The storage medium of claim 27, wherein said sending said process software to said first client computer includes sending said process software to at least one directory on said first client computer.

[c32] The storage medium of claim 27, wherein said sending said process software to said first client computer includes sending said process software to said first client

computer via e-mail.

[c33] The storage medium of claim 21, further comprising instructions for causing said computer to integrate process software for providing said interoperability of email and instant messaging services, wherein integration comprises:

determining if said process software will execute on at least one server;

identifying an address of said at least one server;

checking said at least one server for operating systems, applications, and version numbers for validation with said process software, and identifying any missing software applications for said at least one server that are required for integration;

updating said at least one server with respect to any operating system and application that is not validated for said process software and providing any of said missing software application for said at least one server required for said integration;

identifying client addresses and checking client systems for operating systems, applications, and version numbers for validation with said process software, and identifying any software applications missing from said client systems that are required for integration;

updating said client systems with respect to any operat-

ing system and application that is not validated for said process software, and providing any missing software application for said client systems required for said integration; and
installing said process software on said client systems and said at least one server.

[c34] The storage medium of claim 21, further comprising instructions for causing said computer to implement on demand sharing of process software operable for providing said interoperability of email and instant messaging services, said on demand sharing of process software including:
creating a transaction containing a unique customer identification, requested service type, and service parameters;
sending said transaction to said at least one server;
querying said at least one server about processing capacity associated with said at least one server to help ensure availability of adequate resources for processing of said transaction; and
allocating additional processing capacity when additional capacity is needed to process said transaction, said additional processing capacity being selected from the group of additional capacities consisting of central processing unit capacity, processor memory capacity, net-

work bandwidth capacity, and storage capacity.

- [c35] The storage medium of claim 34, further comprising instructions for causing said computer to implement: recording a plurality of usage measurements selected from the group of usage measurements consisting of network bandwidth, processor memory, storage, and central processing unit cycles.
- [c36] The storage medium of claim 35, further comprising instructions for causing said computer to implement: summing said usage measurements ; acquiring at least one multiplicative value associated with said usage measurements and with unit costs; and recording any such acquired multiplicative value as an on demand charge to a requesting customer.
- [c37] The storage medium of claim 36, further comprising instructions for causing said computer to implement at least one of: posting said on demand charge on a web site if requested by said requesting customer; and sending said on demand charge via e-mail to said requesting customer's e-mail address.
- [c38] The storage medium of claim 37, further comprising instructions for causing said computer to implement:

charging said on demand charge to said requesting customer's account if an account exists and if said requesting customer has selected a charge account payment method.

- [c39] The storage medium of claim 21, further comprising instructions for causing said computer to implement deploying, accessing, and executing process software for providing said interoperability of email and instant messaging services through a virtual private network, said deploying, accessing, and executing process software including:
- determining if a virtual private network is required;
 - checking for remote access to said virtual private network when it is required;
 - if said remote access does not exist, identifying a third party provider to provide secure, encrypted connections between a private network and remote users;
 - identifying said remote users;
 - setting up a network access server for downloading and installing client software on desktop computers for remotely accessing said virtual private network;
 - accessing said process software;
 - transporting said process software to at least one remote user's desktop computer; and executing said process software on said at least one remote user's desktop

computer.

[c40] The storage medium of claim 39, further comprising instructions for causing said computer to implement: determining if said virtual private network has a site-to-site configuration for providing site-to-site access, and if said virtual private network is not so available, installing equipment required to establish a site-to-site configuration for said virtual private network; installing large scale encryption into said site-to-site virtual private network; and accessing said process software through said site-to-site configuration with large-scale encryption; wherein said accessing said process software includes at least one of: dialing into said network access server; and attaching directly via a modem into said network access server, said modem being selected from the group of modems consisting of telephone dial-up modems, cable modems, DSL modems and wireless modems.

[c41] An integrated messaging system for providing interoperability of email and instant messaging services, comprising: a host system executing an integrated messaging system; a link to a first client system associated with an email

sender, said first client system executing a first email application and a first instant message application;
a link to a second client system associated with an email recipient, said second client system executing a second email application and a second instant message application;

a request to reply to an email message received from said email sender using an instant message application;
wherein in response to said request, said integrated messaging system performs:

retrieving an instant message address for said email sender from storage;

associating said instant message address of said email sender with an instant message composed by said email recipient;

transmitting said instant message to said instant message address using said instant message application;
wherein an email address associated with said email sender is mapped to a corresponding instant message address associated with said email sender.

[c42] The system of claim 41, further comprising:
history data relating to said instant message, said history data being transmitted along with said instant message;
wherein said history data includes communications exchanges previously conducted between said email recipi-

ent and said email sender; and
wherein further said communications exchanges include
at least one of:
email messages;
instant messages; and
attachments.

[c43] The system of claim 41, further comprising:
a notification of successful transmission transmitted to
said email recipient if said email sender is determined to
be available to receive said instant message by said inte-
grated messaging system.

[c44] The system of claim 43, further comprising:
a new email message generated by said integrated mes-
saging system, wherein content of said instant message
is transferred to said new email message within an email
application operable for transmitting said new email
message to said email sender;
wherein said new email message is generated in re-
sponse to a request by said email recipient upon un-
availability of said email sender to receive said instant
message.